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Rail Road News.

Mobile and Ohio Railroad.

The Directors are pushing this work forward with a zeal and vigor which promises to advance the road rapidly towards its completition. The contracts for the first 33 miles are all let, and the contractors are rapidly going ahead with the work. The line, commencing at the city, is opened, the timber cleared off, &c. nearly to Eight Mile Creek, and the grading rapidly being finished. From present appearances the grading for the thirty three miles will, in a few months, be ready for the superstructure and the iron.

We are very glad to notice the increasing prosperity of the N. Y. and New Haven Railroad, the receipts for the first three months of 1850, amounted to $89,503 52, against $55,-853 23 for the corresponding three months in 1849, showing an increase this year of $35,-568 29. This is a verv handsome increase; but it must be borne in mind that the road was not in full operation in January, 1849. The above receipts are independent of all amounts due to connecting roads. If freed from the incumbrance of the Harlem road, this would be one of the best paying roads in the country, and we can see no reason why it cannot extend across it and reach this city through a different avenue. We hope to see it done soon.

The Baltimore and Ohio Railroad Company is about putting under contract a large amount of new work, comprising the line from Tygart's Valley River to a point on the south fork of Fish Creek.

Sugar Crop of Texas.

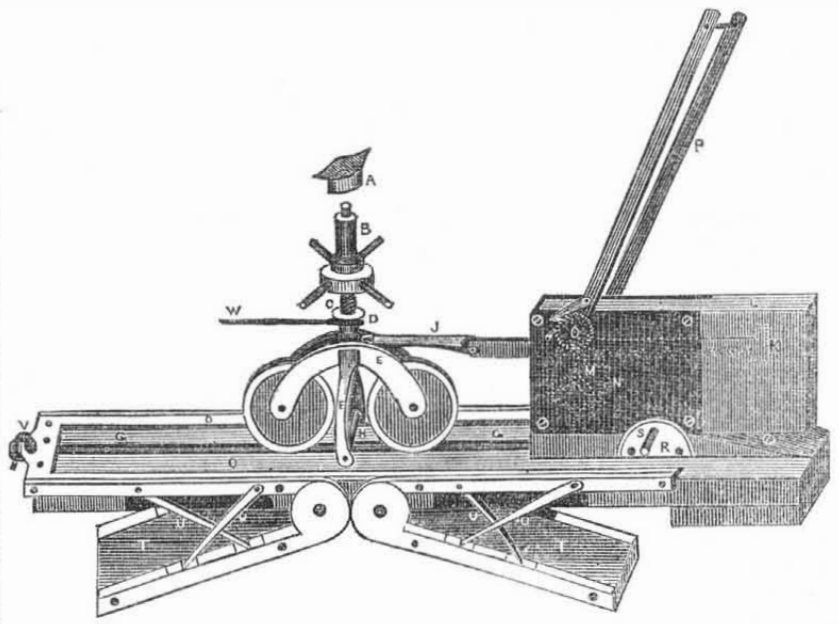
The Galvaston News is informed by one of the most inteligent merchants and sugar planters of that vicinity, that he estimates the sugar crop of Texas next year at ten thousand hogsheads, and at twenty-five thousand in five years after; while in ten years from this time he believes the sugar crop in Texas will equal that of Louisiana. This estimate, that journal remarks, is not made at random, but from data that would probably satisfy most men and remove every reasonable doubt.

English Horses.

It is said that according to a late census of England, the number of horses in that country has been found to have diminshed from 1,000,-000, to 200,000, within the last two years—in other words, the Railroad have dispensed with the use of 800,000 horses, and these animals, as well as oxen, are now scarcely used for transportation; and thus the grain and food which the 800,000 horses formely consumed, have been dispensed with, and the land used for the growth of hay and grass is devoted to the growth of grain alone, for the supply of bread.

There is great excitement among the factory operatives in England, about what is termed the "Relay System,"—that is, to have a gang who go to work after the 10 hours' labor of the other has expired. The ten hours system there is not the thing.

LOCOMOTIVE AND CAR HOISTER.---Fig. 1.



This is the invention of Mr. Nathaniel W. Prime, of Lancaster City, Pennsylvania. Its object is to afford the best means of hoisting locomotives and cars on the track, when by any accident they have run off. The plan, for one thing, is certain to accomplish the object desired, and in the most simple and easy manner.

Figure 1 represents the Hoister as operating on a single rail or track. A represents the cap that rests upon the cylinder, B, having a screw partly through its centre, and four arms at the bottom of the cylinder, which works upon the screw, C, confined in the frame D, for the purpose of raising or lowering a car. E are curved supports fastened to the frame, D, to which two wheels, F, are attached that run upon the rail, G. H is a roller extending from the ends of the curved support, E, across the rail G, each end resting on the side plates, to preserve the equilibrium of the Hoister, and keep it from rocking. J, is the connecting rod attached to frame, D, and rack or screw, K, running into the wood work or jack, L, over pinion M. N is the cogwheel operated by pinion, O, to which the double lever, P, is attached, which operates upon the ratchet, and thus gives the forward or backward motion to the rack, K. R is a cast iron plate on each side of jack, L, fastened by two screws to an elevated post of the platform. S is a bolt runing through plate, R, to confine jack, L, to the platform. Jack, L, works upon the bolt, S, for the purpose of elevating connection, J, when necessary. T are falls working at their centre upon double hinges, having four supports, U, to each fall, for the purpose of leveling and holding the platform firm, when raised or lowered on a lever or on an incline, when the ground may be uneven. V, is the rope attached to the platform to be fastened to the rail or cross-tie to hold the platform stationary. W is the rope fastened to frame, D, to be attached to the locomotive or car to draw the same lengthwise, in place of a block and tackle, which by the operation of the lever, P, (at figure 1, or lever M at figure 2,) and rack, K and I, the car is drawn backward or forward; thus when the car or locomotive may be in a hollow or down an embarkment, the Hoister will draw the car to such a position as to admit the Hoister to be placed underneath and raise the car or locomotive, and by the operation of the devices of jack or screw, L, carry it right on to the track.

Figure 2.

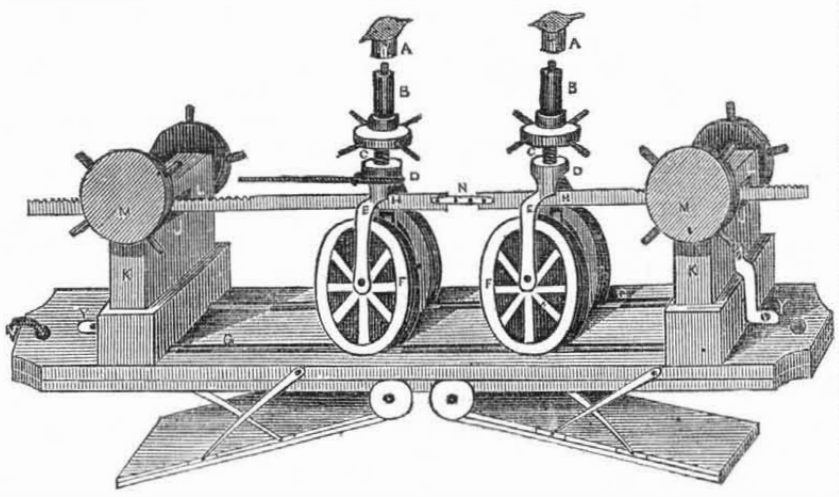


Figure 2 represents the operation of the locomotive or car Hoister, on the double rail or track.

A B C D E and the platform with the falls, T, are the same as at figure 1. F are double wheels running upon the double rails, G. H is an upright support attached to frame, D, and morticed through and fitting into the rack, and extending to the axle of the wheels, F. There is a rack running parallel with the platform upon a friction roller, J, through a post, K, at each end, and operated on by a pinion, L, in each post, which pinion is operated by two wheels or levers, M, with arms, on each side of the post, K, which give the rack, I, the forward and backward motion, and thus carry the wheels, F, along the rails, G. The rack, is divided in the centre, and secured by a connection, N, to lengthen or shorten the rack, so as to bring the screw, C, and cap, A, to the proper place, under the sides of the frame of the car. Y Y are braces attached and fastened to the platform and posts, K.

One or more of these jacks are placed under each side of the car, or one under each end, and the car is raised up on the vertical screw jacks, and when off the ground, the rack and pinion, levers, or the windlasses, are employed to move the vertical jacks on their rails, carrying the car along with them the whole distance of the rail or jack platform, and by repeated efforts of this kind, the car is easily and quickly replaced on the track. The simplicity of this invention is apparent. Every person knows the power of the screw jacks, and their peculiar fitness for lifting the cars, and when placed on wheels, and run on a portable railroad, their adaptation, as herein combined to hoist cars on the track, is self-evident.

The inventor has taken measures to secure a patent.

Useful Receipts.

Low Headed Fruit Trees.

By having low headed fruit trees the sun, which is, perhaps, in our hot and dry summers, the cause of more disease and destruction in fruit trees than all other diseases together, is kept from almost literally scalding the sap, as it does in long, naked trunks and limbs. The limbs and leaves of a tree should always effectually shade the trunk and keep it cool.—The leaves, only, should have plenty of sun and light; they can bear and profit by it. If trees were suffered to branch out low, say within one or two feet of the ground, we should hear very much less of "fire-blight,"—"frozen sap-blight," black spots, and the like. The ground is always looser, moister, and cooler under a low branching tree than under a high one. Grass and weeds do not grow a hundreth part so rank and readily, and mulching becomes unnecessary. The wind has not half the power to rack, and twist, and break the tree, and shake off the fruit; a matter of no inconsiderable consequence. The trees will be much longer lived and more prolific, beautiful and profitable. The trees are more easily rid of destructive insects, the fruit is much less damaged by falling, and the facilities for gathering it are much greater; there is less danger in climbing, and less of breaking limbs. The trees require less pruning and scraping, and washing; and the roots are protected from the plough, which is too often made to tear and mutilate them.

Stammering.

Dr. Turner, of Newark, N. J., in a published note on the subject of stammering, says: "Permit me to say that stammering is caused by attempts to speak with empty lungs. In singing, the lungs are kept well inflated, and there is no stutering. The method of cure is to require the patient to keep his lungs well filled—to draw frequent long breaths, to speak loud, and to pause on the instant of finding embarrassment in his speech, taking a long inspiration before going on again. I cured one of the worst cases I ever knew, on this principle."

Two fine golden solidi of Theodosius the Great, and his son Arcadius, were lately found in Lanyon-quarry, near Penzance—the first minted at Constantinople, and the last, instead of the name of the mint, having the letters O C in the place, which is held to signify that the coin is of the purest gold. The dates belong to the latter part of the fourth and begining of the fifth centuries, when the Cæsars reigned.

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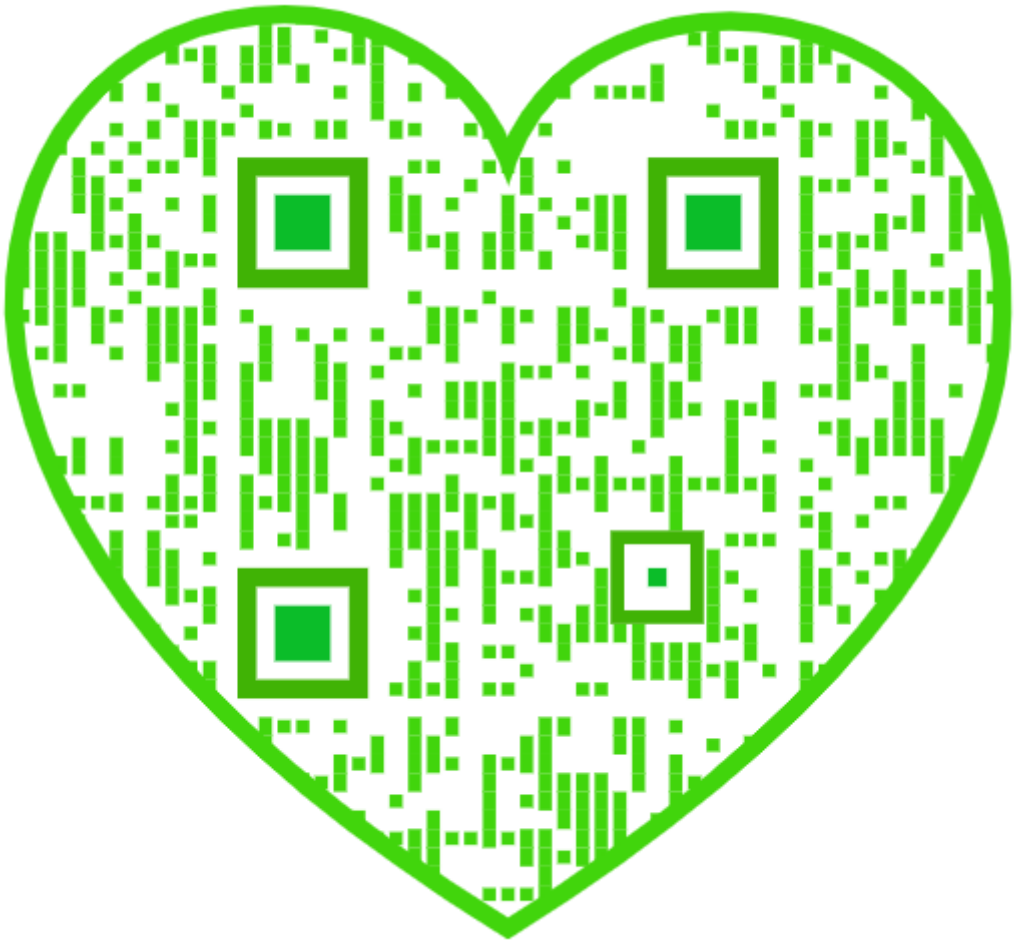

Miscellaneous.

Correspondence of the Scientific American.

WASHINGTON CITY, April 15, 1850.

As was anticipated, that clause of the Deficiency Bill relating to the completion of the wings of the Patent Office Building, has caused considerable commotion in the Senate. But you will perceive it has taken an unexpected turn; and the question now is, not whether the money shall be taken from the Patent fund, but whether it shall be expended at all. It cannot, however, be supposed that the plan of Mr. Dickinson will be adopted, viz., of leaving the wings an unsightly ruin, as a monument of the imprudence of Congress in suffering itself to be coaxed into the commencement of a work requiring six times the amount of the original estimate. It is too late to mourn over the past, and the only wise course left is to vote sufficient money from the Treasury to complete the job, and to act more warily in future. After the proper quantity of indignation has been let off, I believe the amount will be appropriated, but not out of the Patent Fund. The bill as amended will then be returned to the House, when I presume the difficulty will be settled by a Joint Committee of Conference.

During the past week a number of new models have been placed in the Exhibition Room of the Patent Office. Among them is a beautiful one of Hiram Tucker's Improved Mantel; also one of Yerger's Artifical Legs. In the Hall of the National Institute have been placed a number of curious specimens of Mexican armor. Not the least is a notable pair of spurs the spikes of which are nearly the size of a tenpenny nail. Armed with such weapons it is no wonder Santa Anna and his companions were enabled to *run*.

Quite a number of enterprising inventors, with working models for the inspection of Congress, are still in the city, but until the settlement of the slavery question, all attempts to attract attention will be labor in vain.

The making of models appears to be a profitable business, for no less than three persons have recently commenced business in that line near the Patent Office.

Many of our naval officers think highly of the invention of a gentleman of your city. It appears that the steam passes into the condensing apparatus from the cylinders, and being then resolved into water, returns again to the boilers, to go through a similar process, without wasting in the least. By the aid of this invention the fresh water in the boiler at starting can be used for an entire trip.

The Baltimoreans are cracking jokes at the expense of Mr. Porter and his balloon. They tell him if he will only give them notice of his intended ærial visit, they will give him a public reception.

Professor Beck has been delivering a very interesting course of lectures at the Smithsonian Institute, on the Chemistry of Nature. Several hundred young trees have been recently planted on the grounds of the Institute, which in a few years will furnish a most delightful promenade.

A large number of new casts of the new bust of Daniel Webster have been sold at $20 each.

One of our most eminent physicians asserts that a shock from a galvanic battery will prove an effectual remedy where a person has been stupified by an overdose of morphine.

An iron bridge over Rock Creek, near Georgetown, has been completed, and the cost is found to be not more than one half that of a wooden one erected last year. Henceforth iron bridges must in all cases supereede wooden ones, not only on account of their superior beauty, but for their durability.

I hear that the inventor of the machine for extinguishing fires on board vessels, will, when Congress is at leisure, test the power of his apparatus on an old hulk near the Navy Yard. Seeing will be believing.

When your New York Firemen, with their martial music, visited the President, his old war horse, who was grazing on the grounds, pricked up his ears, and charged headlong into them. He thought he was at Buena Vista. Does not this prove that the brutes have memory?

Important to Inventors.

A desideratum long called for, is about to be supplied, by which inventors and the public will be much benefitted. The sage injunction "a place for everything and everything in its place" has never been practically applied to the patent business in this country, for there are no regular marts for the sale of Patent Rights or the exhibition of working models. Mr. P. G. Washington, a gentleman very favorably known in this city, and, from his long connection with the Post Office Department, to the country generally, has taken this matter in hand in a manner best explained to yourselves by the following from his advertisement of the "United States Patent Agency," Washington:—

"It is not the object of this Agency to procure Patents for Inventors, nor to purchase Rights, but to receive Patent Rights in trust, and to assume the expense and risk of their introduction and sale, for an equitable commission on whatever may be realized. Its plan includes the establishment of depots where the public may find and purchase new inventions, and contract for the right to manufacture and vend the same.

The fecunity of American genius is only equalled by the eagerness of American enterprise to avail itself of its benefits, but many meritorious inventions lie wholly dormant for want of time, means, or opportunity, on the part of inventors to bring them properly before the public, while of those they offer in the market, the knowledge is slowly diffused, and the sales correspondingly restricted. This Agency purposes to make immediate arrangements for introducing inventions to the public simultaneously in every part of the United States; and the exhibition, advertisements, and personal applications at which it aims, will enable the public to ascertain, examine and secure the newest mechanism, combinations and processes, in art and science, best adapted to any given use or employment."

Letters addressed to P. G. Washington, D. C., on the business of this Agency, will, if pre-paid, receive prompt attention; in like manner letters may be addressed to, or personal enquiries made of, D. Wellington, (N. E. Patent Agency, Haskin's Building, Court st., Boston); A. L. Smith, (Northern Patent Agency, No. 2 John st., N. Y.), or to E. F. Raymond, (Central Patent Agency,) No. 169 Chesnut st., Philadelphia. ——.

[The above correspondence is published for the benefit of a vast many of our readers, who have valuable inventions patented, but have not facilities for introducing them to the world. An Agency like the above, properly conducted, will have a tendency to do much good to both the inventor and manufacturer, and we hope to see the designs of this company properly appreciated and their labors rewarded.—ED.]

Ocean Steam Navigation to Europe.

The Cunard Steamers commenced their weekly trips from Liverpool last week and will run on the 1st of May from New York and Boston.

The Collins steamers, five in number, will commence their semi-monthly trips on the 27th instant, and their weekly trips on the first of June. The Franklin will begin her trips to Havre next month and her mate will be ready in the fall. The Bremen line, two steamers, now leaves Southampton and New York once a month. The City of Glasgow will leave Glasgow on the 16th for New York, and thereafter leave each port in alternate months.

The Virginia Gold Mines.

The gold mines in Virginia owned by Messrs. Barnum & Co., of Baltimore, have been sold to a New York Company for $40,000. These mines have been yielding very well, and arrangements will now be made to sink shafts several hundred feet, when it is expected gold will be found in more abundance and in larger quantities than nearer the top of the surface.

A Chinese lady with her two children arrived in this city last week from Canton, *en route* for London. She is a lady of rank and very beautiful.

Lewiston and Queenston Suspension Bridge.

This bridge which is to connect the State of New York with Canada at Lewiston and Queenston, will be, when finished, the longest bridge of one span in the world. It is now being erected under the direction of Mr. Edward W. Serrell, Civil Engineer. Mr. S. was one of Col. Hughes' first assistants on the Isthmus of Panama, and made a great part of the location of the railway which is now being built from Chagres to Panama. He has also been engaged for several years upon the public works of this State and New Jersey. The bridge when finished, will be one thousand and forty-two feet between the points of support—nineteen feet wide at the roadway, and is calculated to sustain a load of 800 tons.—The estimated cost of the structure is $30,000. The Engineer proposes to have it open for public travel on the 1st of September next.—[Alb. Eve. Journal.

[The Wheeling Bridge, which is now the longest in the world, is 1010 feet from centre to centre, at the supporting towers, 32 feet less than the one proposed for Lewiston. The aggregate strength of its cables is 4,950 tons, and it will sustain a load of 3,000 tons. The length of the cables, altogether, is 1,380 feet. The Albany Evening Journal must surely be mistaken about the price of the Lewiston Bridge—only $30,000. The estimated cost of the Wheeling Bridge was $139,000. Mr. Serrell is an able New York Engineer, possessing great energy, enterprise and knowledge of his profession.

The Telegraph Bill.

The following is a Bill, which has just past the Legislature of this State, and there is no one who can honestly find fault with it, and we know that its *requirements* were *required*.—

Section 1. Any person connected with any Telegraph Company in this State, either as clerk, operator, messenger, or in any other capacity, who shall wilfully divulge the contents or the nature of the contents of any private communication entrusted to him for transmission or delivery, or who shall wilfully refuse or neglect to transmit or deliver the same, shall, on conviction before any court, be adjudge guilty of a misdemeanor and shall suffer imprisonment in the County Jail or Workhouse in the County where such conviction shall be had, for a term of not more than three months, or shall pay a fine not to exceed five hundred dollars, in the discretion of the Court.

Sec. 2. This Act shall take effect immediately.

New Orleans Mint Closed.

This mint closed on the first of this month. Mr. Macmurdo, the late treasurer, sent in his resignation some months since to take effect so soon as his successor should be appointed, and the department has made two or three appointments, but the smallness of the salary in comparison to the duties and responsibility of the station, and the enormous amount of the official bond, have deterred the parties from accepting.

Early last month, Mr Macmurdo sent in his positive resignation, to take effect on the 31st March, and no appointment having been made, the office is now vacant, with a consequent suspension of operations. The office has been tendered to various parties, who have declined for the reason stated above, and the United States are now without a Sub-treasury in New Orleans.

Extraordinary Discovery.

Prof. Von Grusselbach, of Stockholm, has very lately brought to a state of perfection the art of producing a torpor in the whole system by the application of cold of different degrees of intensity, proceeding from a lesser to a greater, so as to cause the human body to become perfectly torpid without permanent injury to any organ or tissue of the frame. In this state they may remain one hundred or a thousand years, and again, after a sleep of ages be awakened to existence, as fresh and blooming as they were when they they first sunk into the frigirific slumber.—[Exchange.

[The learned Dane has no doubt been dwelling among the bats and bears.

Agricultural Address.

We are indebted to the Agricultural Society of Trumbull County, Ohio, for a printed copy of the transactions of their Fourth Annual Meeting, and which contains the Address of Saml. St. John, A. M., Prof. of Chemistry in the Western Reserve College. In perusing the Address we were struck with the freshness of the knowledge of its author—he is posted up with the very latest discoveries in Agriculture. Our farmers, we see, are exhibiting a most commendable spirit of enterprise and desire for scientific information in Agriculture. Ohio is the first Agricultural State in the Union, and appears determined to keep the lead.

Sir John Franklin.

One day last week news arrived in this city, and published in all the papers, announcing the safety of Sir John Franklin. The news was brought by the dog mail from the wilds of Minesota—some Indians having seen the fleet of the lost navigator sailing safely through the North West Passage. The next day it turned out that it was the vessel sent in search of Sir John that was seen. It is our opinion that Sir John is no more, but it is singular that no traces of him or his hardy and scientific crew, have been discovered. It is almost like a tempting of Providence to go in search of him.

Mineral Riches of Southern Illinois.

The Morgan County Journal says that the little county of Hardin contains iron ore enough to build the Pacific Railroad fifty times over; and the adjoining counties of Gallatin and Salina could furnish the State with coal for a thousand years. Pope County has mines of iron which are of a kind easily prepared for the furnace, being the brown hæmatite. Harden County is also rich in solid bodies of lead ore, which is almost pure galena. Zinc is also found in great quantities in this same region, and frequently in the same mine with the lead. The ore is that called zinc blend—being a sulphuric of zinc.

Silver Mines of Mexico.

The Vera Cruz Locomotive says that the product of the silver mines of Mexico, for the year 1849 will not be less than thirty millions of dollars. What becomes of it all? Mexico is always hard up, always poor, publicly and privately; always on the brink of bankruptcy. This is said to be a larger sum than ever before extracted in one year from the mines.—The years 1804 and 1805, were very productive, but the quantities extracted did not reach thirty millions; it was about twenty six.

Leather.

Tanners complain that it takes more hide than formerly to make a pound of leather, which they attribute to the quick method in which cattle are fattened for market. In 1793 there were 200,000 pairs of leather breeches made for the working people in England. This was the average annual supply. Now cotton fustains, corduroys and other heavy manufactures have been used as a substitute.

Invention of Pegged Shoes.

The first man who pegged a shoe in this or any other country, is said to be now living at Hopkinton, Mass. His name is Joseph Walker. The value of boots and shoes now made in Massachusetts alone is $18,000,000 annually. This means wooden pegs, metal for pegs were employed among the Romans.

Singular Petrification.

The Minesota Pioneer says that at the mouth of Crow River, a navigable stream entering the Mississippi, on the west side. 35 miles above St. Paul, there are said to be visible in the bottom of the river, several petrifications in the shape of men and horses.

The boats on the North River are doing a fine business this Spring, but the Erie Railroad is taking away a great deal of travel from Albany.

James Montgomery complains, that the steam boilers in E.K. Collin's Line are infringements of his patent,—some honestly say, that they are no more than mere evasions at best.

It is an object of some consequence to live in New York in a windy day, as it realizes a scene in the "desert afar"—dust and dirt.

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For the Scientific American.

The Stephensons.

BY J'AR'CEE.

A detailed account of the proof opening of the stupendous Britannia Tubular Bridge, erected under the supervision of Robert Stephenson, the celebrated English Railway Engineer, has lately made the tour of the papers.

To the Civil Engineers of this country Stephenson's name and fame must be as familiar as "household gods," while to the public in general he is known only as the Engineer of the Tubular Bridge, erected across the Menai Straits, on the line of the London and Dublin Railway. The conception, erection and successful completion of this structure, involving novelty of invention and boldness of design; abstruse calculation, and the utmost practical knowledge of the powers and capacities of metals; conversion of means already known to the accomplishment of new purposes, and that far-seeing and fore-seeing of consequences, which defies defeat, would alone fix the fame of any mortal. But Robert Stephenson's name as a just, gentlemanly and generous man, and fame as a bold and successful railway and locomotive engineer, was established years before this Tubular Bridge was thought of. To enumerate the different lines of railway constructed under his supervision, will be superfluous; suffice it to say that in Britain he is Emperor of Railways, and Continental Europe accords homage to his genius. Considering the natural obstacles to be overcome and sectional interests to be conciliated, the construction of the London and Birmingham Railway, in 1839, undoubtedly reflects more credit to the genius of Stephenson than any of his subsequent works, the Britannia Tubular Bridge not excepted. The gradients of this line are based upon the angle of repose of 16 feet per mile, as a maximum, and traversing a densely populated and highly cultivated tract of country, cut up with turnpikes and canals in every direction, necessarily involved the construction of stupendous excavations and embankments, tunnels and viaducts, bridges and culverts. Amongst the excavations may be noticed the Tung Cutting, thirty miles from London, on the chalk formation, about one mile long and from forty to sixty feet deep; and the Blesworth Cutting, in Northamptonshire, through solid limestone rock, abounding in water, about two miles long and forty feet deep. Amongst tunnels, of which there are seven on this line, varying from one-quarter to one and a quarter miles in length, near the village of Kilsby, in Northamptonshire. The erection of this tunnel was originally contracted for by Mr. Nowell, a well known and skillful mason, but upon sinking the shaft he found the shale full of water, which could not be stopped out, and consequently had either to be pumped out or let out by a heading driven the whole length of the tunnel, involving an unforeseen expense which would have been ruinous to a private individual. This preyed upon the mind of Mr. Nowell so keenly that he died in a short time, broken-hearted, when the Company released the heirs from the obligations of the contract, immediately proceeded to the execution of the work at their own cost and supervision. This tunnel was the most difficult and tedious work upon the whole line, and Stephenson here planted Frank Forster as resident engineer, a gentleman qualified from his openness and courtesy of character and great knowledge of mining operations, successfully to gain the confidence and good will of the workmen, and complete in a short time what another set of hands would, if done at all, have been done at the sacrifice of one or two years of time—an item not to be overlooked when the stock of this Company amounted to about five millions sterling. It appears from the Report in the "Times," that Stephenson has again employed him as resident engineer over the erection of the Tubular Bridge. He could not have done better. In practically carrying out all great public works, the amount of abstruse engineering knowledge is not so much to be relied upon for their successful completion, as a good share of that courtesy, firmness and justness, which inspires every one, down to the driver boys and bellows blowers with confidence. Superanuated outsiders may doubt, carp and grumble, but the men actually employed have made up their minds that the work *will* be completed—and it *is* completed.

Robert Stephenson is a native of the County of Northumberland, England, and son of the no less celebrated George Stephenson, the father of the present system of Railway travelling, and the inventor of the first locomotive, the "Rocket," which carried off the prize at the opening of the Liverpool and Manchester Railway. George Stephenson accomplished for land travelling what Robert Fulton achieved on the water. America is justly proud of the one—England ought to glory in the other. George Stephenson was a genius—a self-made man. In youth and manhood he labored as a collier in the coal pits. He perceived and felt in himself the want of education, and to obtain the means for his son Robert to go to school, his natural mechanical gifts enabled him to repair his fellow workmen's clocks and watches at over hours! He has been heard to boast publicly that when a boy he "knocked dung" for two pence per day! and yet George Stephenson died a year ago at his seat at Tapton, Derbyshire, a rich man, and the first Railway Engineer of the age!

The people of the United States have no conception of the exertion, the almost superhuman exertion, necessary for a man in England to shake off ignorance and poverty, and clothe himself with riches and fame. The terrific struggle of anguish is better pourtrayed in the marble of the Laacoon than in pen and ink descriptions.

In applying, little more than twenty years ago, for the Act of Incorporation for the Liverpool and Manchester railway, George Stephenson dared not tell the Commons house of Parliament what he knew could be accomplished by the use of railways for the purpose of travelling. He dared not tell them that he contemplated running trains at the rate of twenty miles per hour, lest he should be considered an enthusiast, a madman! At the time the Act was obtained, and at the time of the completion of the line, the Company had not definitely settled upon the power to be used for the transportation of the cars. Stationary engines, with ropes and horse power had their respective advocates; but the Company wisely offered a prize of £500 sterling for a locomotive which should draw a given weight a given number of miles in a certain time. George Stephenson, who had superintended the erection of the railway, now set himself to work to build a motor to travel upon it, and in a short time the "Rocket" was ready. In this engine was displayed for the first time the method of generating steam and regulating the supply of steam by the steam itself, by means of the tubular boiler and the blast pipe exhausting into the throat of the chimney. The engine was four wheeled, and the cylinders were placed outside at an angle of about 30° towards the driving shaft. After twenty years experience, the locomotive does not essentially differ from this. They have been improved, proportioned and beautified, but the mode of generating and applying the power remains the same now as then.

Upon the successful completion and operation of the Liverpool and Manchester Railway, Robert Stephenson established at Newcastle-on-Tyne a Locomotive Factory, and conjointly with his father entered into the erection of those stupendous lines of railway which encircle the Isle of Britain in the meshes of a net. Of course they could not superintend all the lines in operation at one time, which left openings for the talents of other eminent engineers, such as Brunel, Vignoles, Rastrick, Locke, Buck, Cubilt, Gooch, Cabery, Walton, &c., &c.

Upon the completion of the London and Birmingham Railway, the principal contractors of England met at the London Tavern for the purpose of presenting Robert Stephenson with a service of plate, as a testimonial of their respect and esteem. To some narrow minded worms this step appeared much in the shape of a public bribe, but not one of the parties interested had any more idea of bribing Stephenson than they had of rooting up the monument. Contractors had taken contracts and had to complete them under an advance in price of labor of thirty per cent., they had signed contracts which were all one-sided in favor of the companies, and which, if strictly fulfilled, would have ruined every mother's son of 'em. Some undertook to do in two years that which was impossible to be done in three; others were responsible for slips in cuttings, and others undertook to make tunnels where they knew little or nothing of the nature of the soil which had to be excavated. Some, John Bull fashion, stuck to their contracts manfully; some pulled up stakes and run,—but when settling day came, Stephenson as umpire betwixt the company and the contractor, stepped in and acted conscientiously, equitably. He had the power of the Lord Chancellor, and he used it wisely. If the contractors, as a body, cleared nothing, very few lost anything. In thus acting, Stephenson ran the risk of losing favor with companies, but his fame was founded too securely to fear the attacks of concentrated meanness.

There is something very remarkable and unusual, in the fact that George and Robert Stephenson, father and son, are both men of great genius and talents, natural and acquired. Both had to force themselves upwards—George by his natural genius and strength of mind; Robert by the same qualities burnished by education, private study and intense application.

Who can fail to discover the prophecy of Joel vii. 7–10 :—"They shall run like mighty men; they shall climb the wall like men of war, and they shall march every one on his ways, and they shall not break their ranks," &c.

The father has "gone to that bourne from whence no traveller returns;" The son yet remains amongst his fellow mortals, both alike respected, honored and admired, great and good and shining examples of what may be achieved by genius, talent, and untiring application.

The Value of the Mechanic Arts.

The following article is taken from the Philadelphia Ledger. We select it for its intrinsic worth in advocating claims which the public, especially the wealthy, generally overlook:

"A writer in one of the public journals ascribes the prosperity of Philadelphia to commerce. Commerce, especially when free and unshackled, is one of the most important sources of wealth, not only to Philadelphia, but to all countries and to every city; but there is another worthy of the most profound consideration, and which we are too apt to overlook from the quiet and unobtrusive walks of its labours. We allude to the mechanic arts, which lie at the bottom of Philadephia prosperity, and have made us so distinguished in every foreign country for the beauty and solidity and speed of our locomotives, the superb elegance of our coaches, the taste and power of our fire engines, the splendor of our household furniture, and the utility, in general, of all our mechanical inventions and machinery to perform and abridge labor. The mechanic arts are so familiar to us that we too often fail to appreciate them. They are so noisless that we hear not their voices, except when we enter the factory, where hundreds of operatives are building up the wealth of society, on their part, to aid the farmer and the fisherman in their productive avocations, and who furnish all the materials for commerce. Every department of labor is the link of a vast chain, but the mechanic arts forge a thousand, while commerce only constitutes one, while it depends on the thousands. Every part of a noble ship comes from the workshop of the mechanic, as well as the locomotive and car.—Every part of her cargo is furnished by the farmer, the planter, the mechanic and the manufacturer. Mansions, stores, palaces, towers, forts, citadels, light-houses—all rise from the magic action of the mechanic arts. Interior embellishments are alike indebted to its agency, where luxury lounges on its easy cushion, or the caprice of Epicurean indolences laps itself in the soft dreams of Sardanapalus; in the power where beauty slumbers, in the saloon where literati discuss, or in the Senate where statesmen debate. If all these facts are trite, yet how seldom are they thought of? Do we not overlook the details of wealth while we revel in their enjoyment? Do we not forget the hardy, weather-beaten Tar while luxuriating in the tropical fruits brought from distant climes by his labor? What do we owe, then, to the mechanic arts, to husbandry and to the fisheries? Everything. Yet how seldom do we accord them justice? How prone are all to ascribe to other agencies all the merits of the mechanic arts, and to assign to the mechanic a position inferior to that of all other agencies? Commerce is a great element of civilization, but the mechanic arts are as superior, as a thousand horse-power engine is to a locomotive of one-horse power.

A Work of Art.

The Evening Post says there is now in the Custom House a copy of the statue which an eminent French artist, Gayrard, is about to send to M. Vattemare, for presentation to Congress. It is designed to embody the artist's idea of the American Republic, and represents a young female of graceful figure and majestic countenance seated upon a bale of cotton, whose head is surrounded by a halo of thirteen stars, and who holds in her hand the banner of the nation, surrounded by the Phrygian cap. Her left hand rests on a helm, significant alike of sovereignity and maritime power. At her feet is the American Eagle, and distributed about the ground are emblems of various kinds, such as bows and arrows, the cornucopia, the plough, a sheaf of Indian corn, &c., &c. This model is about two feet in height, and rests upon a pedestal conceived in good taste, the sides of which will be ornamented with bas relief representations of prominent events in the history of the United States, such as the Declaration of Independence, the Treaty of Peace of 1783, the Surrender of Cornwallis, &c. The whole reflects great credit upon the skill and ingenuity of the artist, and when finished in bronze, as it is intended to be, the figure, some twenty feet in height, will form a most imposing object. The model is sent over in advance, to get the criticism of competent persons before the large statue is finished.

Death by Spontaneous Combustion.

The following extraordinary occurence is related by the Gazette des Tribunaux:

"A few days ago in the tavern near the Barriere de l'Etoile, a journeyman painter, named Xavier C———, well known for his intemperate habits while drinking with some comrades, laid a wager that he would eat a lighted candle. His bet was taken, and scarcely had he introduced the flaming candle when he uttered a slight cry, and fell powerless to the ground. A bluish flame was seen to flicker about his lips, and on an attempt being made to offer him assistance, the bystanders were horrorstruck to find that he was burning internally. At the end of half an hour his head and the upper part of his chest were reduced to charcoal. Two medical men were called in, and recognized that Xavier had fallen a victim to spontaneous combustion. This conflagration of the human frame is frightfully rapid in its progress; bones, skin and muscle, are all devoured, consumed, and reduced to ashes.

A handful of dust on the spot where the victim lay is all that remains."

[We have seen the above in a number of papers and must pronounce it to be more wonderful than true. The human body is very difficult to burn.

Killed by the Crater of Vesuvius.

Charles Carroll Bayard, Midshipman of the U. S. Navy aged 22, and a promising son of a distinguished gentleman of Philadelphia, died at Naples, Feb. 22d, of a wound received from a stone thrown from the crater of Vesuvius while he was standing in company with other officers on the side of the mountain.—The eruption was one of the most brilliant and tremendous that has been witnessed for many years. It was, moreover, remarkably sudden, as none of the usual signs preceded it. A letter states that the mountain literally roared with the efforts it made to disgorge itself. The noise was like the firing of cannon at sea, and at every discharge there was thrown up a mass of lava and rocks, which at night looked like balls of fire.

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New Inventions.

Improved Grain Dryer.

Mr. Chas. S. Snead, of Louisville, Ky., has invented a very excellent Grain Dryer, for which he has taken measures to secure a patent. It is composed of a number of hollow semi-spherical large circular tubes, the upper part of which are concavo, or, to use a common term, "hollowed out," to receive the grain. These pipes being hollow are heated by steam, and any number of them, (but ten is the number used) are set at a small distance apart, above one another, firmly secured to a frame. There is an opening made through every one, to allow the grain to drop down from the one to the other, thus passing down through and over the whole set of tubes. There are a number of rakes placed at different distances apart on radiating arms, into the concave part of every pipe, and these rakes are set in motion by a band and pulley driving the vertical shaft, on which the rake arms are secured. The rakes, therefore, stir the grain all the time, and carry it forward and around each tube, pushing it into the opening, whence it drops into the next tube, thus carrying the grain round the whole circumference of the six tubes, and delivering it perfectly dry at the bottom. There is no fear of scorching, and the grain can be operated by the motion of the rakes, to dispel the moisture in any kind of grain, be it more or less. This Grain Dryer has been in operation for some time, and given great satisfaction. The grain is delivered on to it by a hopper at the top, and it is suitable for drying meal as well as grain.

Horse Shoes Fastened without Nails.

A Mr. William Perry, of Plymouth, Eng., has invented and taken out a patent for fastening horse shoes by wires instead of nailing them on. The holes for the wires are bored through the animal's hoof by means of a drill which is set with the utmost accuracy to bore at the right angle to prevent pricking the "*quick*," something which our blacksmiths all know about, and which always causes lameness in the animal. The wire is introduced in the form of a staple, from the upper part of the hoof—the limbs of the staple approaching one another towards the shoe, to suit two holes in the shoe, punched close together, when they are twisted together and folded down into little recesses cut in the shoe. Four staples—two on each side, suffice to fasten the shoe. The wire must be of the best manufacture and annealed. This is a plan of horse shoeing which appears to be both new and good, but a practical test is the only way to prove the value of any invention. All we can say about it, is, the plan can be easily tried, and there is some evidence of its value in the fact that the patent alone must have cost the inventor all of $800.

Sheet Iron Pipes.

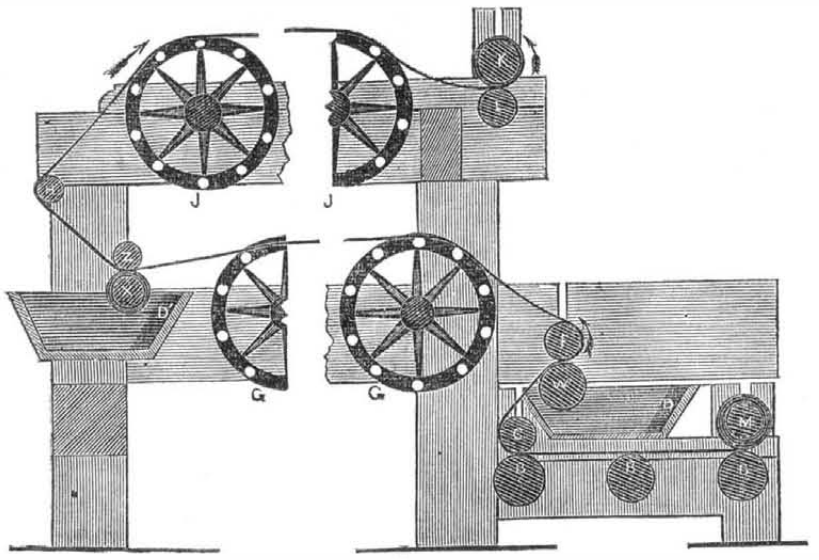
Sheet iron pipes of a new manufacture have lately been introduced into England, from France, where they have been in use for several years. They are made of sheet iron, which is bent to the required form and then strongly riveted together, after which they are coated with an alloy of tin, and the longitudinal joints are soldered so as to render them both air-tight and water proof. In order to give them more stiffness, they are next coated on the outside with asphalte cement, and, if they are intended to be used as water-pipes, the inside is also coated with bitumen, which resists, like glass, the action of acids and alkalies.—They are so elastic that they will bear a considerable deflection without injuring the pipes, or causing any leakage at the joints. The vertical joints screw together in the same manner as cast iron gas-pipes. These pipes have been used for water, for gas, and for draining, and are found to be more economical than cast iron, besides being less liable to leak, and for water-pipes they are more healthy than the common ones.—[Annual of Scientific Discovery.

A new alkali has been obtained in Scotland from kelp, and it is very well styled, kelpina.

Improvements in Door Knobs.

Mr. Wm. L. Kirkham, Brandford, Conn., has made an exceedingly useful improvement on the spindles or shanks for door knobs, for which he has taken the usual measures to secure a patent. Heretofore the spindles of door knobs had to be made of different lengths for doors of different thicknesses, hence there was no uniform system of making the spindle—no pattern suitable as a general rule for all. Mr. Kirkham's invention comprises an adjustable spindle in the collars of the door knobs (two being used for a door,) whereby one general length of spindle can be set in the collars, to suit doors of different thickness. This invention is valuable, because its field of application is very extensive.

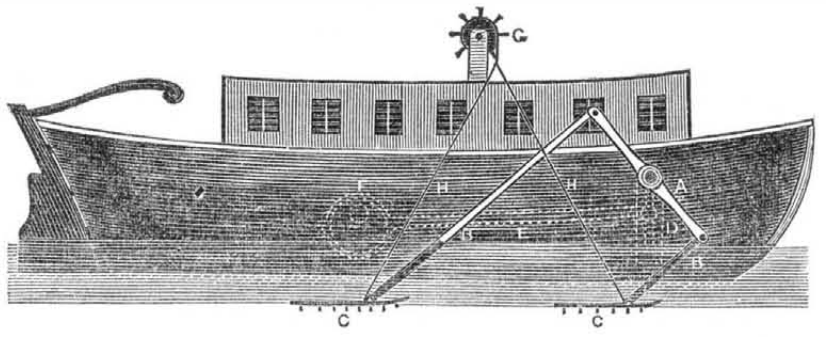
IMPROVED MACHINERY FOR MAKING COTTON BATTING, AND FOR SIZING AND DRYING IT.



This machinery is the invention of Mr. Jeremiah Essex, of Bennington, Vermont, and was patented about four years ago. The patentee and those who have long known the practical value of the improvements patented, have deemed this the best way, (and no doubt is) of spreading before the public a knowledge, frank and open, of the same.

The same patent is of two parts,—one to form the batting into webs of different or one even thickness, as may be desired, and of any length, by combining the bats as delivered from different carding machines making them into one web and winding it on a roller, from whence it is delivered to the second part of the invention represented by the accompanying engraving, which is a side vertical section, only it shows but four drying reels partly broken off, whereas there are 8 reels employed,—this will be understood. M represents the roller with the web of batten round it, as taken from the first part of the invention. B B B and C, are rollers to conduct the batten up, between the two rollers W and F. The roller, W, runs in a box, D, filled with size or glue, of such kind most suitable, consequently the upper surface of the web is sized and carried along over the drying reels, G G, and then between the rollers, X, and Z. The lower roller, X, runs in another size box, D1, and this sizes the other side of the web of batten, whence it is carried over the roller, H, and the two upper drying reels, J J, and received on a roller, K, being pressed firmly thereon by the roller, L. The roller, K, is allowed to rise up as it fills, by the slot in the bearings in the frame. The reels are open rollers made of metal with horizontal rods, as represented, running on their circumferences on which the web rolls and rubs. These reels and the whole frame is made of metal, to prevent the possibility of burning, for as the heat to dry sized batting, has to be very intense, the danger of burning the batting and the machine is imminent, if the machine is not made of incombustible materials. The drying reels are operated by cog wheels or their equivalents. The claim for this invention is "the arrangement of one or more series of reels that rotate by means of wheels or other equivalents to convey the bat, in combination with the sizing or glazing apparatus for glazing or sizing and drying cotton, or other wadding in the manner described." The arrangement of this machinery for this part of the invention is very simple, and good because simple. Any other information may be obtained by letters addressed (*p.p.*) to the Patentee.

WILCOX'S AMPHIBION PROPELLER.



"*Great* inventions, like *great* ideas, are only thrown out at *great* intervals." This invention is that of Mr. H. G. Wilcox, of Tioga, Tioga Co., Pa. However much we may differ in opinion from the inventor, it is but right that he should let the world judge of the merits of his invention, which he considers of no small importance for canal navigation, and this is the reason he has chosen the Scientific American as the best vehicle for letting the world know what he has done. This figure represents a canal boat.

A represents a rocking shaft with two arms on it, to which are attached the two propelling arms, B B, with grappling *claws*, C C, secured on plates to seize hold of the bottom of the canal as the shaft is rocked, and "heave ho" the boat forward with the mighty impulse of rowing a discomfitted politician up "salt river." The dotted lines represent the interior mechanical arrangement to operate the rocking shaft. I is an eccentric on the crank shaft of the engine. E is the eccentric rod which is connected to the rocking shaft by a connecting bar and guide block, D. H H are two ropes attached to the graplers, C C, and passing around a pulley, G. These ropes are to be employed in lifting up the graplers when they come in contact with snags, so as to snag them up and clear the way for the progress of the Amphibion Propeller. Brunton invented the Mechanical Traveller for railroads in 1812, and Gordon another for common roads in 1818, but a land carriage is very different from a water vessel. Having been nearly wrecked doubling Troy Point, on the Erie Canal, long before the railroad branched away out through the West, no such event would have happened had our boat been fitted up with Mr. Wilcox's propeller.

New Cotton Ginning Machine Wanted.

The goverment of India having, at the suggestion of the Agri-Horticultural Society of India, announced that a prize of Rupees Five Thousand shall be given for an improved cotton-cleaning machine, (unrestricted by any particular mechanical principle) such as, in the opinion of the goverment, shall have fully attained the principal objects described by the society, namely, "to be so perfect in its action in separating cotton-wool from the seed, and possessing such qualities of expedition, simplicity and comparative cheapness, as to render it likely to come into practical use;" and the Agri-Horticultural Society having determined to adjudge its Gold Medal for the same object, its hereby notified, that the following are the conditions under which the above and other prizes will be awarded:

Conditions.—1. The machine shall be capable of separating the ordinary short staple cotton grown in India from the seed.

2. Each competitor shall deposit, free from charge, a full-sized working machine in the society's rooms, Metcalfe Hall, Calcutta, together with a letter, descriptive of the machine and the mode of working it, addressed to the honorary secretary of the Agri-Horticultural Society of India, on or before the 1st of January, 1852.

3. In the invent of no machine being deemed worthy of the full amount of 5,000 Rs., a smaller prize will be awarded for the best machine offered, in proportion to its merits, in the estimation of the goverment of India.

4. The society's gold medal will be given, with the goverment prize of 5,000 Rs., and in the event of there being more than one competitor, a silver medal will be awarded for the next best machine, provided it shows much ingenuity and comparative success.

Notice is hereby also given, that the Agri-Horticultural Society of India will be prepared to award (subject to the same conditions as those named above) a silver medal and the sum of Rs. 250, placed at its diposal by Major Jenkins, Agent to the Governor-General in Assam, for an efficient cotton threshing-machine, adapted to free from trash either seed cotton or cotton wool of the indigenous kinds.

N. B.—Samples of Indian seed cotton can be obtained on application to Dr. Royle or Messrs. Grindlay & Co. after the 1st of June next.

James Hume,
Honorary Sec. Agri-Hort. Sec. of India.
Calcutta, January, 1850.

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Resolution passed at a general meeting of the Agri-Horticultural Society of India, held on the 13th December, 1849.

That one hundred copies of the above advertisement be transferred to Charles Huffnagle, Esq., Consul of the United States of America, he having most kindly offered to arrange for their gratuitous distribution throughout that country.

[The above is an official advertisement published in the "Republic" at the seat of Government (Washington.) In order that our mechanical friends may know the amount of the prize, we would state that a rupee is 2s. 2d sterling, or the whole amount $2,500. The prize is a very small one, considering the distance the machine has to be carried for exhibition. It is not likely there will be many competitors in the United States, unless it be with some machines that are now in use, some of which we believe will answer the purpose very well. If it had been some literary prize, for *gentlemen wranglers*, the prize would perhaps have been ten instead of five thousand rupees.

New Kind of Coal.

The schooner Peerless, says the Boston Post, arrived at this port on Tuesday, brought part of a deck load of new coal. A vein was discovered this Spring, near Dorchester, Nova Scotia, and some few chaldrons have been got out. It has a glossy appearance, and when lighted with a match it burns like gas. Dr. Jackson is analyzing a piece of it.

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Scientific American

NEW YORK, APRIL 20, 1850.

Changes in Society—Progress of Travelling.

Within the present century, the customs of Society in respect to travelling, have undergone great changes. Fifty years ago, not a single steamboat disturbed the waters of a river, lake, or sea, in the wide world. Now what do we behold? Europe bridged to America by a steam voyage of ten days, and the smoke of the steamship's funnel, afar off on the ocean, may be seen weekly from the Peak of Teneriffe and the Cliffs of Helena's Ocean Isle. Fifty years ago, jaunty sloops carried our forefathers up the North River to Albany in the *short* space of five and six days. The sloop captain was then a man of no little distinction—the entrusted treasurer of great men's lives; but "Othello's occupation's gone." Instead of a worthy human cargo, the North River skipper is now content with a cargo of beef, beans or bran; and he casts a wistful look to the swift "*Alida*," as she fleets past him with crowded decks, steaming her way to old Beaverwyck, in less time than he can clear the Pallisades. Our rivers, lakes and seas are now swarming with steamboats, conveying travellers from place to place, hundreds of miles apart, in less time than our country farmers used to take in going to meeting. Much as the steamboat changed the customs of society, it was found insufficient for modern requirements. As Adam was without Eve, so the steamboat required an helpmete, in order that water and land communication might cordially embrace each other. For many years the water-maid sought in vain for an appropriate partner. She had passed out of her teens and had reached the full bloom of womanhood, ere a favored one presented himself. It was then, when at twenty years of age, Mr. Locomotive, with the speed of the "Rocket," flew to embrace the lonely damsel, and soon "woo'd and won the maiden fair." Since the nuptials of Mr. Locomotive and Miss Steamboat were celebrated in 1828, society has received a new and progressive impulse.

A few years ago very few travelled to any great distance, or frequently from their firesides, and those who did were content with the slow stage coach or canal boat. But such kinds of locomotion would be "stealing from time," now. The stage driver was once a man of some importance in his way—a kind of King Jehu, with his long whip and his "six in hand." It was no small event, and that but a very few years ago, when he drove into the village with his prancing steeds to the sound of his own bugle. But alas! for the instability of human professions, up came the iron horse, snorting on his steam whistle "Get out the way, old Dan Tucker," and bumping without much ceremony both driver and stage off the track. The driver's horn is yet sometimes heard afar in woods and among the Alleghanies, but its sound is less merry than of old. Instead of the driver rattling away at "Hey, jim along," or "Old Zip Coon," he is frequently heard to play with a sigh,—"Oh the days when we went staging it, long time ago."

There is nothing more striking than to witness the *new spirit* which has been awakened by improvements in locomotion. The smith still wields his hammer as of old, the carpenter shoves his plane as his father did before him; the grocer weighs and measures his sugar as his ancestor did—but nobody travelled before, and everybody travels now. Our neighborhood is not bounded by Uncle John's house over the creek, now, but our neighborhood is "the whole world" and our neighbors "the rest of mankind."

We have now the Steamboat, Locomotive and Telegraph, and by them, the means of communicating and travelling in an incredible short space of time, but it is probable that we will not long be content even with such rapid means of travelling or speaking. Who can tell, that we may not, in forty years after this, travel at the rate of 100 miles in the same time and as easy as we now travel 40 miles. Greater wonders have been accomplished during the past forty years.

House Cleaning.

As this is about the season when good housewives clean their houses from cellar to garret, it may be well to say a few words on the subject. When you wash paint, don't use soft soap and warm water, for that will take off the paint as well as the dirt. Use cold water and hard soap. Scrub the floors with soft soap, and don't put down the carpets until the floor is perfectly dry. Always put down some fine clean (mind clean) straw under the carpet, and lay it smooth and level. Carpets may be cleaned by pounding them in strong soap-suds and washing them well out of the soap. The suds must be very strong and cold. This is done by cutting down the hard soap and dissolving it in warm water. The suds should feel slippery between the fingers. Bedsteads should receive a complete scrubbing with soap and water, and should not be put up until perfectly dry. The seams and holes should then be anointed with corrosive sublimate dissolved in alcohol or sulphur mixed with camphine, or a solution of the chloride of zinc. No person should go to sleep in a damp bedroom. Many people, by overlooking this caution during house cleaning season, catch severe colds, and make their beds with the clods of the valley before the subsequent Christmas. Always commence to clean at the top of the house, and descend by steady and regular stages. Some people clean their houses with quietness and scarce any disorder, others do not do any more work, but make a great deal of noise. If there is a dog or cat about the house, it generally disappears till the squall is over. The grand rule for facilitating work is system. Arrange all the work to be done, and how it is to be done, before commencing. For want of system many a job has to be done over and over again.

The Tyrian Purple.

As the nymph Tyras was with the dog of her lover, Hercules, she perceived that the animal's mouth was stained a beautiful violet color from the fish of a shell which he had broken on the sea shore. And so beautiful did it appear to her, that she declared to Hercules he should see her no more until he had procured for her a suit dyed of that color.—Then Hercules, moved by love, collected an immense number of those shells, with which he dyed a robe for the nymph. Such is the legend (from the name of the nymph so evidently metaphorical) connected with the discovery of the celebrated Tyrian dye.

The character of the ancient Tyrian Purple is greatly magnified as we look it at through the long telescope of history. Almost the only accounts of the Tyrian purple are handed down to us by Aristotle and Pliny, especially the latter, in whose time this dye had attained to its greatest perfection. He describes it as having been obtained from two species of shell fish, the *Bucinum* and the *Purpura*. This dye was famous a thousand years before the Christian era. As many do not know that wool, silk and cotton will not receive the same color from the same substances, we would state that the Tyrian purple was dyed in wool alone. It is stated by the historians named, that the shell fish were bruised, and the liquor obtained from them was left in salt water, in tin vessels, moderately hot, for ten days. Into this liquor the wool was kept for five hours, then taken out and washed, and then immersed in the bath until all the color in the liquor was exhausted. To produce different shades of colors, Pliny says, nitre, wine, and a marine plant called *Flucus*, were occasionally added. One color was very dark, inclining to a violet with a reddish hue, and another was a crimson, but the shade most famous resembled coagulated blood, "laus ei summa in colore sanguinis concreti." There was another shade called, in Exodus, chap. xxv., "wool twice dyed." This was the deepest and richest color, produced by select fish, and without the employing any alkaline liquor to darken the shade. In the reign of Augustus, a pound of this color on fine wool cost about $180, but none were permitted to wear it in those glorious days of despotic power, upon the pain of death, except those of royal blood. The art of dyeing this color was lost to the world about the 12th century, it expired with the last remnant of Tyre's existence. During a number of ages, this famous dye was lamented as an irrevocable loss.

In the early part of the 17th century, Mr. Cole, an English gentleman, discoverd some shell fish on the coast of England, which produced a light purple color, and in 1709 the famous Reaumur, of France, discovered on the coast of that country various shell fish, which produced a fine purple color on linen. Fontenelle, in giving an account of Reaumur's discovery, said that it was a greater discovery than the ancient purple. But at the time of this re-discovery of the *purple*, America was beginning to send some of her famous colors into Europe. From the scarcity of the shell fish, and the trouble of forming the color, it never could be produced at a price below what Royalty alone could pay, but as in politics, so in art, the cochineal insect of America has given to the lowliest the privilege of wearing, at a moderate price, this once royal color. A most splendid scarlet is dyed on fine white wool by ground cochineal, at the following rates per lb :—1½ oz. cochineal, 2 oz. cream of tartar, ½ wine glass full of the nitro muriate of tin. The wool is boiled in a clean vessel of copper or tin, in pure water, with the above ingredients, for one hour. The color can be blued, or made of a violet shade, by handling the wool, in warm alkaline water, for about half an hour. There can be no doubt but a portion of tin from the Tyrian baths was taken up by the hot salt water, and absorbed by the wool. This was the true basis or mordaunt of their celebrated color.

The Woodworth Patent.

Messrs. Editor :—Holding different opinions from those expressed in the Scientific American about the Woodworth Patent, I have taken it upon myself to ask if you had examined the subject in all its bearings, and had viewed it with that impartiality which generally characterizes the articles in your paper. When any man brings forward a useful invention—one which, from its nature and superiority over others, renders it of universal application, there is never wanting men, who, by every means, endeavor not only to rob the inventor of the profits accruing from his invention, but what is more dear to him still, the honor of the invention. This was the case with the deceased William Woodworth,—he was robbed in life of the profits of his invention; and selfish men, like the bigots of old, cannot let his ashes repose in peace. His improvements in Planing Machines have been of the greatest benefit to the United States, and surely his heirs have the best right to receive some remuneration for the inventions of their predecessor, whose invention, taking the price of planed lumber subject to the patent tax, has been reduced at least 30 per cent; and he was the first inventor of the machine as it now stands, and no other, as has been proven over and over again, and can be proven again by a fair trial.

Hoping that I might get you to give the subject a more thorough examination, I remain yours, M.

Remarks on the above.

It is the fortune of Editors, to receive blame for the opinions of others—to be accused of uttering sentiments expressed by correspondents. If the readers of newspapers were more critical in examining all they read, they would soon learn to separate the wheat from the chaff. Our correspondent "Junius Redivivus" has given his views about the Woodworth Patent, and as he always speaks to the point, we say, he can take care of himself. We know that our correspondent spoken of above, tells some truths, and he surely knows that he expresses the very sentiments we have uttered again and again, about plundering inventors of their rights. We have no sympathy with patent pirates—not a spark of it. But what are the complaints against the Woodworth Patent? Why, that the Assignees hold a patent which claims, by an *ex parte* act of Congress, *a patent* for an invention *not invented* by the deceased William Woodworth. The claims of the deceased William Woodworth, were different from the claims granted to his heirs and assignees, after he was dead. This is the complaint, and apparently a just one. The agents of the Woodworth Patent, some of them at least, have been very tyranical about their privileges.

We have personally said little about this present controversy, because others are saying so much. We like every inventor's rights faithfully protected, but we don't like to see Congress make special laws for favorites, because they have means, and influence at command. It is our opinion that the agents of the Woodworth Patent have tried to stop machines, from working, which had not the least approximation in operation, to the Woodworth machine. We always endeavor to view every subject impartially, and to speak out freely without fear or favor, for we always keep ourselves free from all entangling alliances.—Ed.

For the Scientific American.

Percussion Cap Machine.

I observe in the public journals frequent paragraphs, extolling the ingenuity and efficiency of a Percussion Cap Machine, at the U. S. Arsenal in Washington, which forms and primes the cap; and in your last number I read that it is now being exhibited at the Capitol. This machine is a combination of principles for which I hold a patent, dated March 20, 1849 (applied in October, 1848.) I have a memorial before Congress, asking compensation for the invention of machinery and infringements, for the manufacture of these caps. As I consider the representations and exhibition referred to are of a nature to bias public opinion to my injury at this crisis, therefore justice to myself and the public seem to demand a history of facts.

The Cap Machine and improvements in the manufacture, were prosecuted by me at the U. S. Arsenal in West Troy, N. Y., by request of the Board of Ordinance, during the years 1842-3-4-5. At these dates there was not either in Europe or America any useful self-operating machine for this purpose; nor is there at this moment any which is not an improvement of my rights, which I intend soon to defend. In 1846 one of my machines was put in operation at the Arsenal, and the caps made by it were "primed" by a machine constructed there, and corresponding with my projections. In 1848 an enlisted man there was permitted to "combine" the priming with the cap machine, in violation, as I conceive, of an understanding implied, that the Board of Ordinance would not interfere with my improvements.

This "Combination" is the machine now in the Capitol; it was a part of my original plan, and was in drawings in 1844. In waiting during three Sessions, the result of my "Memorial," I have till now refrained preferring an injunction on their progress.

R. M. Bouton.

West Troy, April 9, 1850.

[Mr. Bouton has been known to us by repute for some years, as a very worthy and ingenious mechanic,—[Ed.

English and American Patent Laws.

The London Patent Journal says that a Bill is about to be brought into Parliament for the amendment of the English Patent Laws. It also says, "We understand it is the intention of the American Congress to reduce the fees for patents to English subjects to the same scale as that for American citizens." We can assure the Patent Journal that there will be no such change in our Patent Laws in a hurry, unless the English Patent fees are first reduced to the same standard. Whenever this is done, the reform spoken of will at once be effected.

We are glad to see the Journal working so hard for a Reform of the British Laws. The fees for the three kingdoms are shamefully high. The huge seal—that troublesome appendage to a British Patent, should be consigned to the shades of Pluto.

Great Patent Case.

On the 15th inst., before Judge Kane, Phila., injunctions were ordered against Brant, and 20 others for infringing the Parker's Patent, for improvements on water-wheels.

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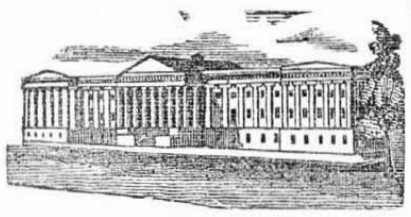

LIST OF PATENTS CLAIMS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending April 2, 1850.

To A. Keeney, of Carlisle, Pa., for improvement in agitating coal grates.

What I claim is giving the compound vertical and horizontal oscillating motion to the grate-bars as herein set forth.

To J. F. Lawrence & L. A. Farnsworth, of Claremont, N. H., for improved blind and shutter opener and fastener.

What we claim is the opening and closing of window blinds, and retaining them when open or closed, by means of the rotary opener, (which is circular at its centre and gradually enlarges into scroll shaped extremities, having a groove in its surface extending spirally from one of its scroll-shaped terminations to the other,) combined with the arm, secured to the window casing, and the lever made fast to the blind, substantially in the manner herein set forth.

To O. B. Loomis, of Windsor, Conn., for improvement in Rotary Churns.

What I claim is the devices of gearing as described, by which I change the motions of the churn box and dasher, with regard to each other so that while one is stationary the other shall rotate and vice versa.

To J. W. McElivee, of Philadelphia, Pa., for improvement in Spring Matresses.

What I claim is so constructing a spring matress, that the springs of the same shall project outwards beyond the light frame work, which supports them in their places so that the whole upper and under surface as well as the edges of the matress shall present a yielding surface to the touch by means of the projecting springs.

I also claim, the manner of constructing the hair quilted upper or under coverings of the springs as set forth, that is to say, the hair covering which rests on or against the springs is first made separately like a quilted bed spread, and when drawn over the springs, by which the matress though long used presents a uniform and elastic surface.

To C. Perley, of New York, N.Y., for improvements in cat-head and shank painter stoppers.

I claim the application of the lock piece, with the wedge or lug, to act in the mortise, to hold the link on the lug, when put down for that purpose, or let the anchor "go," by raising it, without the intervention of any other moving part, such lock piece, and lug or wedge, being connected or combined, and operating with the other parts, substantially in the manner and with the effects described and shewn.

To F. M. Ray, of New York, N. Y., for improvement in the manufacture of india rubber springs for cars, &c.

I claim the method of making cylinders or rolls of prepared india rubber by rolling up a thin sheet of prepared india rubber on a mandrel whilst the said sheet is in a green state, and as it comes from the heated callendering cylinders, substantially as described.

And I also claim, as my invention in combination with the callendering cylinders, such as are usually employed in the manufacturing of prepared india rubber, a mandrel or cylindrical rod pressed against the periphery of a cylinder or roller, so that the thin sheet of prepared rubber, in the green state, and taken as it comes from the callendering cylinders, may be wound upon the mandrel, and the several windings made to adhere by presure, substantially as described.

To J. Sweet, of Hughesville, Pa., for improved removable teeth for scrapers.

I claim securing the removable teeth to any common scraper in the manner herein set forth, so that they can be attached at pleasure, whereby the same scraper is adapted to ordinary earth excavation, or to the excavation of gravel or cobble stones, as described.

To H. Tucker, of Cambridge, Mass., for improved Mantel-piece.

I claim the manufacture of mantel pieces, by the combination of cast iron frames of ornamental open work, with a back, or ground work of plate glass, or other vitrified substance, colored in imitation of marble, or after any other style of decoration, the said ground work being secured to the frames, by means of plaster of paris, or any other means that gives strength and support to the whole, substantially as described.

To S. E. Winslow, of Kensington, Pa., for spring, inclined plane and roller sash stopper.

What I claim is the depressed form of the spring, or inclined plane as I have called it, and the roller so adjusted to this depression by the slide, that in raising the window sash, it operates as a friction roller, but in lowering the window sash, it operates as a clog to keep it from falling, substantially as described above.

FOR THE WEEK ENDING APRIL 9, 1850,

To Wm. P. Barnard, of Bristol, Conn., for improved arrangement of door springs and levers.

What I claim is attaching the spring, and rod, to the jamb of the door or standing part of the hinge, when combined with a swinging rod attached to the door, or swinging part of the hinge, all the parts being arranged, substantially as described, whereby the spring tends to close the door until opened to its fullest extent, and then acts to hold the door open.

To H. Billings, of Beardstown, Ill., for composition for covering hams.

I do not intend to claim as my invention the covering of meats or other articles, with paper and cloth, or other flexible materials, previous to coating them with my preserving composition; but what I claim is the formation of a preserving composition for coating meats, fruits, vegetables, &c., by the union of rosin, shellac, and linseed oil, substantially in the manner and in nearly the proportions as herein set forth.

To D. H. Chamberlain, (Assignor to Homers & Ladd) of Boston, Mass., for improvement in Dividers and Compasses.

I claim making dividers compasses with the micrometer adjustment herein above described, the combination of devices for the same consisting of a circular rack bar, arranged in slots in the legs of the divider, with a spring in the slots of the movable leg, and the micrometer screw, all working together as herein above specified.

To J. E. Dalton & Thos. Stevens, of New Vienna, Ohio, for improved entrance to Bee Hives.

We claim the devices for opening and closing the entrance of the bee-house in the manner set forth.

To A. Dietz, of New York, N. Y., for improvement in rings for harness, &c.

What I claim is the combination of a sliding bar or sliding bars, (either with or without guides or guard bars,) with a ring, in the manner substantially as described, for the purpose of being applied to straps for harness or for any other purpose to which it may be applicable.

To J. Dixon, of Jersey City, N. J., for process for making cast-steel.

I claim in the above process of making cast steel, partly decarbonizing pig or cast iron in an oven, stratified with pulverized oxide of iron, substantially as described, and then melting such decarbonized pig or cast iron in crucibles, substantially as described.

[Mr. Dixon, we see, is bound to carry the manufacture of American steel above all foreign competition.]

To M. Finkle, of Utica, N. Y., for improvement in machinery for making wire heddles.

I do not claim the old machine herein described, as being one heretofore used, and by which an incomplete heddle is produced; but I claim the arrangements herein described, whereby the heddle is made complete in one machine and at one and the same operation, or any other combination which is substantially the same thing, and by which analogous results are produced.

To J. Johnson, of Geneseo, N. Y., for improved method of working the pall in parallel vices.

What I claim is the within described combination of the spring pawl, and the metalic plate (or lever), with the foot of one of the crossed levers, by which the spring pawl is made to act upon and retain the rack bar, when any article is grasped between the jaws of the vice, substantially as herein set forth.

To Wm. G. Ladd, Jr., of Cambridge, Mass., for improvement in the Fluid Level.

I claim a lever for determining a horizontal and perpendicular, and the inclination of any slope with the same, constructed substantially as herein above set forth, that is, with a shallow cylndrical vessel or a tube in the shape of an entire ring, half filled with quicksilver or other liquid in combination with a graduated annular dial, whether a floating needle or indicator be used or not, the whole arrangement being substantially as herein above set forth.

To S. Lewis, of Tiffin, Ohio, for improvement in machinery for cuttings screws on the rails of bedsteads.

I claim the combination of the adjustive clasp, screw, and holder, for sustaining and confining the nut, to the end of the rail, and centering the same so that the axis of the nut shall always be coincident with the centre of the rail, whether the latter be of large or small diameter, substantially as herein set forth.

I likewise claim the pecular form and manner of securing the cutter to the cylindrical head, as described, that is to say making the cutter as represented and letting the tapered end of the shank into the recess, bringing the angular shoulder against the cylinder, and sustaining the bevelled points against the interior bevelled surface of the cylinder head, by which arrangement the instrument, during the operation of cutting, is forced firmly against the head, the strain upon the confining screw being thereby greatly reduced and the cutting tool itself strengthened.

To J. Low, of New Britain, Conn., for improvement in Harness Hames.

What I claim is making the hame of a single piece of wrought iron, inclosing a piece of wood in such a manner as to present an entire iron surface, so that it may be readily finished in any convenient, or ornamental way, and in a durable manner, when the hame is constructed, substantially, as herein described.

To C. Mortimer, of Philadelphia, Pa., for process of making paint from bituminous coal.

I claim the process of making black paint from bituminous coal by the cleansing in water, grinding, mixing with acid, re-grinding in acid and washing, substantially as herein fully set forth.

To J. A. Pease, of Philadelphia, Pa., for elastic roller and sash bearer.

I claim the combination of an elastic roller, with a shaft and box, the whole constructed and arranged as before described, for the purpose of supporting a sash in any desired position.

To J. Peirson, of Wilmington, Del., for improvement in gearing for seed-planters.

I wish it to be distinctly understood that I do not claim the alternate motion by which the seed tubes and seed rollers are thrown in and out of operation, but what I claim is the employment of the latch plate, in combination with the connecting plate, carrier, and intermediate cog wheel, for alternately gearing and ungearing the cog wheel, on the axle of the plating cylinder with the cog wheel on the hub of the driving wheel, in the manner and for the purpose described.

To W. H. Phillips, of Surrey, England, for improvement in apparatus for extinguishing fires. Patented in England, Dec., 4, 1844; In America April 9, 1850.

What I claim is the means of subduing and extinguishing fire by generating carbonic acid gas and other gases, resulting from combustion, in apparatus substantially as herein described,

To Wm. P. Pierce, (Assignor to E. & T. Fairbanks & Co.,) of St. Johnsbury, Vt., for improvement in scale beams.

I claim in combination with the beam, and the knife edge bearings, of the loop, the two vertical or nearly vertical projections, salients, as arranged with respect to loop and beam, substantially in the manner, and for the purpose herein before specified.

To A. Nash, of Logansport, Ind., for improvement in endless aprons for Threshers.

I claim the endless grating composed of bars secured to the hide or leather straps by twisting the latter in the manner and for the purposes herein set forth.

To L. B. Pitcher, of Syracuse, N. Y., for improvement in Hydraulic Regulators for machinery. Antedated March 23, 1850.

In this invention I do not claim the size, form or shape of any piece as new, or the general combination of pumps, pistons, or floats or other parts connected to the machinery to be regulated, or to the motive power to be regulated, which are in use in the general combination of hydraulic motion regulators, but claim to have overcome, two several difficulties, which have heretofore existed in this kind of regulators, as follows, first, the want of sensitiveness to take early notice of any variation of motion, of quickness in motion to open or close the steam valve, of power energetically applied to overcome friction of steam valve. Secondly, the difficulty which has already existed in obtaining and maintaining a uniform discharge of water or liquids, from under pistons, rising and falling, as motion varied, connected to steam valve, and acted upon by water moved by pumps.

What I claim is the combination of a pump, moved with a reciprocal motion, with the machine sought to be regulated, and with the water or fluid acting on a piston and parts connecting it to a steam valve which controls the steam moving said machinery, in such a manner as to cause the piston to rise and fall at each action of the pump, without moving the valve, while the machinery has the proper speed, and moving, or opening, or closing, said steam valve with a quick striking motion, overcoming friction about said valve, as with the blow of a hammer, when the motion of said machinery is too fast or too slow, or any analogous arrangement which will produce the same result, substantially in the manner and for the purposes and objects herein set forth.

To J. D. Price, of Smithsburg, Md., for improvement in apparatus for sprinkling streets, &c.

What I claim is the combination of the sprinkling pipe and force pumps with the revolving water vessel, the several parts being arranged and operating, substantially as herein set forth.

To J. F. Reasin, of Darlington, Md., for improvement in Plow Cleaners.

What I claim is the plow-cleanser constructed of two share blades, substantially as herein set forth, for the purpose of cutting in two the weeds and other obstructions, which accumulate upon the coulter, and thus detaching them therefrom.

To A. M. Rice, (Assignor to S. H. Lombard & A. M. Rice), of Boston, Mass., for improvement in Chimney Caps.

I lay no claim to the invention of a ventilator, made with a series of conic or pyramidal guards, fenders, or frustra, but I claim one made with the helical continuous fender or guard, applied to the chimney or flue, and having its coils arranged or inclined with respect to one another, substantially as herein before specified.

To D. G. Starkey, of New York, N. Y., for improvement in Oil Cans.

I claim the combination of the socket, carrying the male screw, and the taper tubes or spouts, screwing into the socket, with the collapsable gutter percha reservoir, in the manner described or in any other way substanally the same.

[This is an excellent oil can. No machine shop should be without it, not one.—Ed.]

To B.M. Townsend, of Quincy, Ill for improvement in machines for raking and loading hay.

What I claim is the simultaneous raking and loading of hay from the ground by machinery substantially as herein set forth, whereby the labor of making winnows and cocking as in the usual process of hay-making is saved, at the same time that the operation is both expedited and cheapened.

To M. Wilder, of Princeton, Mass., for improvement in Wing Gudgeons.

I claim the improvement of making the wing gudgeon, when cast or founded, with a clear space, between each of the wings and the flanch or face plate, the same being for the purpose as herein set forth.

ADDITIONAL IMPROVEMENTS.

To J. H. Smith, of Brooklyn, N. Y., for improvement in separating stearine from Elaine. Patented April 1, 1841. Improvement added April 9, 1850.

What I claim as my additional improvements, is the application of alcohol, as herein described, for the purpose of making candles.

[It strikes us that this same substance was described long ago in Vol. 4, Sci. Am. The use of alcohol for separating the stearine from

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oleine is old and well known, that we can assure all our readers.

DESIGNS.

To D. L. Barlett, of Baltimore, Md., for design for Stoves.

To J. Crandall, of Troy, N. Y., (Assignor to A. Cox & Co.), for design for stoves.

To J. Wager, of Troy, N. Y., for design for stoves.

TO CORRESPONDENTS.

"A. W. De C., of Me."—We have received both model and letter. The Caveat fee is $20, paid down. Your plan appears to be a very good one. No rights can be so sold, *as rights*, without a patent. You may make any bargain you choose.

"J. G., of N. H."—We cannot tell how the valves of the English engine areo perated, whether by heart cams, or others, but on page 313, Vol. 2, Sci. Am., there is an engraving of one. Mr. Bishop's. There is no man who wishes to save money, who should be without our paper,—it has saved tens of thousand of dollars to the community since it was established.

"S. K., of Mass."—As you say, "no inventor should fail to get his invention published in the Sci. Am., if he is wise for himself." You know the benefits of it. The cost of the cut of the machine you speak of will only be $10.

"C. R., of Vt."—We know of no anchor like yours. It appears to be good and useful, and patentable, but you could not, we think, insert the other invention. The leech is good, certainly new and patentable.

"C. R., of Vt."—We have been unable to procure a map of Minesota, and have therefore given you credit for $1.

"D. G., of N. Y."—Your cheese-press is a most excellent one, but we do not see a point on which to base a good claim for a patent, except it may be the combination of the weight frame with the crank levers, but even this claim is very doubtful, as it may be considered only an equivalent, by the Patent Office, for a common mechanical combination. We could not advise you to apply for a patent.

"T. W. J., of Iowa."—Patents have been taken out for fastening horse shoes without nails. The Awakener is very good, but the Clock Awakener is the best, in our opinion. Rembert, whose name was on our last list of Patents, uses the endless apron on his Reaper.

"M. T. R., of N. Y."—Your Lock Gate could not be patented. It is at least 35 years old: this we can assure you.

"Erasmus."—You should know by this time that we do not publish the letters of persons under an assumed name, merely, and especially when penned in such miserable language and more miserable pen scratching.

"L. B., of Conn."—We have never advocated the right of patentees to patent property in entail forever. You have not paid strict attention to the articles on this subject, as the views expressed are the same as yours.

"M. E., of Ind."—So far as we can judge by your sketch, your paddle wheel is well known and has been used for propellers years ago.—Wait till our history is published and see if we are not right.

"T. S., of Ohio.—The Patent Fund will not long be much of an affair according to present appearances.

"J. L., of N. Y."—The same principle and material which you propose, has been often used. The precise form of your wheel we have never seen before, but it so nearly resembles others that we think you could get no patent.

"F. G. H., of Rochester."—We conclude that you made a mistake in writing us, as we made no such statement, and you certainly acted the part of a *sneak*, by not having courage to sign your name or to pay postage. If the machine had been your own we presume you would not have objected to *any* statement in regard to it.

"N. W. P., of Pa."—Your propeller is very ancient in principle, a model was exhibited at the last fair of the American Institute precisely the same, it having been put there as a curiosity. No patent could be obtained for it.

"H. &. W., of S. C."—We shall attend to your order without delay, and write you in answer to enquiries.

"F. &. B., of Ill."—It is probable that the best lathe for turning spokes is Blanchard's. A. R. Carter of Newark, N. J., can give you the full particulars. We cannot answer your last question satisfactorily at present. It will all depend upon the action of Congress. You had better wait for a while and see.

"E. W. D., Mass."—You had better construct and forward us a small model of your nail feeder, as we cannot get a clear view of it from the drawing. In fact we do not understand it at all. 27 sent.

"W. K., of Pa."—We must decline publishing your article as it is too long for our paper. We advise that you put the manuscript into the hands of H. C. Baird, of Philadelphia, and have an edition in pamphlet form issued by him. It is out of our line of buisness to attend to the publishing part—we would be glad to oblige you if possible.

"C. S. S., of N. Y."—We do not know anything about the price of such a screw as you want, by addressing your enquiries to T. Wood, corner of Chatham and Duane st., N. Y., you could probably ascertain. We will hand your letter over to him for attention.

"D. J. H., of Ala."—We will cut the cover off from Minifie's Drawing Book, and forward it by mail. We have been waiting your order.

"W. W., of Vt."—You had better address the inventor in regard to the lathe, as we are unable to answer.

"P. M., of Eldersville, Pa."—The book to which you refer in your letter of the 1st, was directed to Mr. A., and forwarded by Adams & Co.'s. Express to Pittsburg.

"H. McA., of Md."—We can see nothing patentable in your pump. See notice of West's published a few weeks since it operates similar to yours.

"E. B., of Ky."—We have entered your name for one year's subscription, and the amount before sent was passed to your brother's credit for a continuance of his. $7 received.

"M. E. J., of N. Y."—The notice to which you refer was intended as an answer to your enquiries.

"C. A., of Conn."—An ingenious machine for charging purcussion caps was patented in 1848, but it is too complicated to be explained without drawings. It has before been alluded to in the Sci. Am.

"J. M. of Ill."—Your order was attended to some time since, and the books forwarded.

"S. S. S. of N. Y."—Your engraving and advertisement will appear next week. We could not find room for it in this number.

"W. C. C. of Ala."—J. E. Gower & Co., manufacturers of the Submarine Armour, reside in Boston Mass., 62 Broad st.

"Correspondent"—Is informed that we do not know of any such establishment as he refers to.

"C. O. R., of California."—Glad to hear from you. The buisness referred to is progressing finely, we shall be able to communicate with you by the last steamer in May.

"H. & D., of N. Y."—We have given all the information about drying barrels &c., in our possesion. We think that it would answer your purpose well, but do not advise a change if with your present mode you are doing a profitable buisness.

"W. McB. of Ohio."—We cannot discover anything patentable in the sketch sent. It is a cutter wheel with adjustable cutters—a good machine but not new.

"N. B., of Mo."—The specifications and drawings of your invention, with fees, were forwarded to the Patent Office on the 16th. An engraving of the "Clutch" will appear in next week's Sci. Am. It is a good invention.

"J. Curtis, Danemora, N. Y."—On the 30th of March we forwarded a letter to you, which demanded immediate attention. Have you not received it?

Money received on account of Patent Office business, since April 10, 1850:—

C. S. & M., of Pa., $50; W. S. K., of Ct., $50; G. D. P., of Mass., $30; C. P. W., o Vt., $20; D. N. T., of Vt. $40, and H. T. P., of La., $30; W. B. K., of Mass, $20; N. G. F., of N. H., $20.

Back Volumes Scientific American.

We are no longer able to supply back Volumes of the Scientific American, *complete*, of 1, 2, 3 and 4. Our readers will please bear this in mind. Of Vols. 3 and 4 we can furnish sets of about 40 numbers each (not consecutive,) for one dollar per set; of Vols. 2 and 3, sets of about 50 Nos. (containing both Vols.) at the same price (one dollar). We have parcels done up ready for mailing of all the different Vols. referred to above, and on receipt of $1, either of the sets ordered will be immedially forwarded by mail.

Notice

Whenever any of our friends order numbers they have missed—we shall always send them, if we have them on hand. We make this statement to save much time and trouble, to which we are subjected in replying, when the numbers called for cannot be supplied.

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" 12 lines, 75 cts., " "
" 16 lines, $1,00 " "

Advertisements must not exceed 16 lines, and cuts cannot be inserted in connection with them for any price.

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American Steam Engine, Plate and Book of Description	3,00
Scribner's Mechanics, Tuck, Gilt,	1,25
Treatise on Marine and Naval Architecture,—published monthly, 12 Nos., each	,75
Leonard's Mechanical Principia,	1,50
Mahan's Civil Engineering,	3,00
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Scientific Museum.

For the Scientific American.

Tanning—Practical Remarks.

Concluded from page 240.)

The rolling machine produced a great change in the appearance and quality of sole leather. It was invented about the year 1810 by Col. William Edwards. Previous to that period, the hammer and lap stone, smoothed the surface of the sole—a laborious operation. The roller is of brass, 4½ in diameter and 8 inches long, cast over a steel gudgeon projecting at each end 1½ inches. It runs in brass boxes, inlaid into two jaws of iron, which extend up the sides of the vibrator, and are firmly secured to it by bolts. The vibrator is of hard wood, 4 by 8 at the lower end, and 4 by 5 above the jaws—about 10 feet long, secured to a spring pole, 20 feet long and 7 by 7, by a noddle pin. The spring pole is secured firmly at one end, and rests over a fulcrum about 8 feet from the vibrator. The vibrator is kept in its place by guides on each side, and is connected with the moving power by a pitman about 10 feet long. The motion is usually given by a crank 12 to 14 inches in sweep, upon a vertical shaft about 100 per minute. Beneath the roller is a table 19 feet long by 8 wide, 2 feet 8 inches high, of two inch plank, well supported, and under the sweep is a bed-piece, of the hardest wood that can be obtained, corresponding to the circle of the vibrator, and bolted firmly to a tier of timbers laid horizontally (up to, and making part of the face of the table), which in turn are supported by vertical timbers to the foundation of the building. The natural position of the roller is about two inches above the bed piece. The side of leather is spread on the table, the back to the operator, the grain up, and is drawn under the roller when in motion. The roller is brought down upon the side by a compound lever attached to the spring pole by iron rods, by a foot of the operator at pleasure, the pressure supposed to be equal so 5 tons.

The side is moved while the lever is down, or not, at the will of the operator, until the whole surface is smoothed alike, when the pressure is taken off, and the side withdrawn and laid upon the floor, in his rear. Previous to the rolling, the side is spread upon a sponging table, on the side of the loft, opposite to the rolling table, and water is applied by a woolen cloth to any dry part of the surface, to temper the whole alike; the curls and doublings flattened out when it is folded, and laid in a pile convenient to the roller. Sometimes a little oil is added to the water, when the grain of the leather is dry and husky.

The leather is hung up by one end upon hooks, or nails, in any vacant part of the drying loft after rolling, for 24 hours; when it is nearly dry, it is taken down and rolled a second time, and packed down for 12 hours more, in square piles, flesh up, and as heavy a pressure put upon it as any convenient dead weight will give. It is then ready for market.

When the rolling was first introduced, old prejudices were strong against it. The late Jacob Lorillard, of New York, made a journey into Massachusetts to see the machine operate on the leather, and after witnessing the beautiful change it produced, he exclaimed, "it covers up a multitude of sins." He never fully approved of it,—and Guest, the old leather dealer in Albany, would never, "'tis said," buy a side of rolled leather while he lived. At the present time, and for twenty years past, no sole leather is marketable until it has been rolled. The surface of the leather is extended beyond the power of the lap stone and it is cut up so economically that a larger per centage of soles are saved which were lost in parings before. Like many other inventions, the time secured by this patent was well nigh expired before it was generally adopted, and the present generation are reaping its unrequited benefits.

In concluding these remarks, we would observe that some tanners heat their bark by steam, either by a boiler erected for the purpose, or by the waste steam from an engine, where that power is used. Steam is supposed to increase the quantity of liquor and reduce the strength in proportion, while the heaters increase the strength by evaporation, making less in quantity. It will readily be perceived that this business requires constant care and watchfulness throughout, neglect in the early stages is fatal.

Four patents at least have been used to bring forward the business to its present perfection, none of which have been profitable to the inventors. The hide mill, the heater, the roller, have stood every test, and are one or all found in every tannery. Justice to that mind and genius who invented them, now in the shades of life, would loudly demand a renewal of the patents; and like justice in extension of the time secured by old patents, (as is the copyright) to twenty-eight years, and we hope a movement of this kind by the inventors of America, may yet obtain such an amendment to the Patent Laws of the United States.

—

The "Practical Remarks on Tanning are now completed, and we must say that no such information has ever been published in any work before. The articles have been furnished by a practical tanner, of great experience, and scientific knowledge—who can reason on cause and effect, He carries on a very extensive business, and has generously written for the purpose of spreading abroad useful knowledge.

There are a few errors in the articles, to which we refer.

Erata.—1st Art., page 184, for "living nature" read "living creature."—2nd Art., page 196, for "usually 4 to 6 hours" read "2 to 4 hours," and for "when the openings are closed the heat decreases," read "the heat *increases*," also read "*current*" instead of "*amount*" of air, and "*casts*" them into the pool, for "*carts*," &c.

Art. 3rd, page 208, for "hemlock bark only 3¾ to 6 per cent." read "to 4 per cent.," and instead of "200,000 trees destroyed," read "800,000."

Art. 4, page 216, for "*work* with a round, and *those* sizes," read "*week*" for work, and "*their*" for those.

Art. 5, page 224, for vats "5½ feet deep," read "5 feet deep."

These are all the errors—very few indeed for proof uncorrected by the author. As the articles are standard, all the errors require to be thus pointed out.

History of Propellers and Steam Navigation.

[Continued from page 240.]

THE INCLINED PLANE STEAMBOAT.

FIG. 36.

This boat has novelty, but greatly lacks the grand essential—practicability. It is 24 years old, and is the invention of a Mr. Thomson, of Scotland.

A A, and B B, are two parallel iron bars, to which the planes are fixed, the one being close to the side of the boat, and the other farther off, so that in working alternately up and down, they pass each other freely. These planes projecting from the vessel's sides will be objected to, but as this is merely a trial, improvements of course were to follow. 2, 2, &c. the planes, each of which are fastened to the parallel bar by their respective swivels. D, D, and E E, are working beams that raise and depress the planes. The ends, D, and D, working close to the boat for the bar, A A, while the other end reaches out for B B; the rod, H, connects two working beams in the manner represented in the figure, so that both ends of the parallel bars by this communication, rise and sink alike. There are two rocking beams that run across the boat to the other side, where there is the same machinery as on this side, only there is no occasson for more than one connecting rod, H, as this one is sufficient for all. Now, the piston rod of the engine, by working a lever upon one of the rocking cross beams, sets the whole in motion: there is no occasion even for a single wheel er crank, a few connecting rods and levers were all that was required.

In this boat we have two sets of paddles working below one another, on each side of the boat, something which has not been presented in any other engraving in this History of Propellers. The inventor had the object principally in view of safety. The general opinion about steamboats (especially those with paddle wheels), about twenty-five years ago, was an "unfitness for sea navigation." The old tar used to say "oh yes, they are good enough for carrying landsmen up and down a river in a sunny day." Had any sea captain been told, thirty years ago, that steamboats were safer than sailing vessels, and would yet usurp their dominion on the ocean, he would in all likelihood be looked upon as a madman, expressing opinions good enough for a "fresh water sailor."

The above inclined plane paddles, are totally unfit for propelling—they never would answer for a steamboat navigating the ocean. No propeller will answer the purpose, however scientific the ideas embraced in its construction, if it is not perfectly and firmly built in all its parts, without hinges, and such like things.

Curious Fact.

Dr. Sichel has communicated to the "Annales des Sciences Naturelles," Paris, a curious fact, which some of our readers may like to amuse themselves in verifying. He says that, twenty years since, he made the observation so carefully, and for such a period of time, as to become perfectly assured that cats which have perfectly white coats (that is, with not even a spot of another color) and blue eyes, are invariably deaf. We may make, as close to them as we will, any noises that usually terrify them, such as the cracking of a whip, imitation of the barking of a dog, clapping the hands, &c.—and yet, provided these sounds are not of a nature to convey vibrations, by shaking the ground, as when we strike the floor with a hammer, the animal will remain perfectly indifferent. If, however, there is the smallest spot or shade of black, brown, grey, red, &c., on the coat; or if the iris, instead of being blue or grayish-blue, is yellow, or partakes of some deeper color, then will the auditory functions be found in their normal state. This blue color of the iris is indeed rather rare, and generally found only in very young animals; and when, in the progress of age, it becomes exchanged for a deeper color, though the white skin yet remain, hearing becomes established.

[Paris is the most wonderful city in the world for prodigious developements. The range of observation of her savans is the most wonderful, minute and comprehensive. From men with tails to cats without a black spot in them, nothing escapes their notice, except it may be "*probability*."

A Cave Found.

The Shepherdstown (Va.) Register says that as the workmen at the cement quarry of Mr. Alexander R. Boteler were blasting on Friday week, they blew off a rock from the front of what was soon discovered to be a natural cave. The entrance is of the size of a flour barrel.—One of the men entered it the distance of a few feet, and drew out the neck of a black bottle, and also a horse shoe.

[Strange if true.

An American Mineralogist in Turkey.

D. J. Lawrence Smith, of Charleston, S. C., whom, some four years since, received the appointment of Mineralogist from the Sultan of Turkey, is now on his return home, having fulfiled his engagement with the Turkish Government. During his absence, he has been actively employed in making explorations throughout Turkey and Syria, and his labors have been distinguished by many very interesting and valuable discoveries in science.

A Disaster Averted by Discipline.

The steamer Alex. Scott had a narrow escape from distruction by fire during a recent trip to New Orleans. She had among her cargo a lot of baled hemp which was stored in the engine or deck room. Just below Natchez a deck passenger, either designedly or by acident, set the hemp on fire. The flames spread rapidly, and the cry of fire caused the utmost consternation among the passengers. The captain and his gallant crew however did not waver for an instant. The boat was headed for the shore and the passengers and others with whatever valuable they could collect, were ordered to the bow of the boat, to be ready to leap on shore. In the meantime, M. Macfarlane, the mate, called the crew together. The beds were stripped of blankets, and each of the crew seized a blanket and with their mate at their head rushed into the midst of the devouring flames, and with the blankets smothered the fire, and in a few moments had it entirely subdued. Thus, by the coolness of the officers, and the perfect discipline and obedience of her crew, a perhaps terrible disaster was averted, and the Scott escaped uninjured. The author of the accident was put ashore at the next wood yard, and when the boat arrived at New Orleans the accident was forgotten.

Law is fine buisness when confined to books, but very different when transferred to "courts."

About 52,000 bodies are yearly buried in the city of London.

LITERARY NOTICES.

ORIGIN OF THE MATERIAL UNIVERSE.—A little work purporting to give a description of the manner of the formation of the earth, and events connected therewith, has just been laid upon our table by Messrs. Dewitt & Davenport, Tribune Buildings. The name of the author of the above pamphlet has been omitted in the publication, but it is supposed to have been written by one who remembers when this earth was in a fluid state.

TRIAL OF PROF. WEBSTER.—By the favor of C. B. Norton, Esq., we are enabled to acknowledge the reception of Phillips, Sampson & Co.'s edition of the Trial of Prof. Webster for the murder of Dr. Parkman. The book contains 315 pages, and is probably the most correct edition published, but such books do no good, and we cannot recommend people to buy them.

"The Mistake of a Lifetime: or, The Robber of the Rhine Valley." By Waldo Howard, Esq. This magnificent romance of the mysteries of the Shore and the vicissitudes of the Sea—meets with an unprecedented sale. It is in the hands of almost every one, and those who have not already obtained it, will unquestionably get it. It sells for only 12 1-2 cents, and may be found at any periodical depot in the United States. The book was issued last week, at the "Flag of our Union" Office, by F. Gleason, who, we learn, keeps his presses running night and day, to satisfy the great demand for this splendid production. S. French, 151 Nassau st., (late 293 Broadway, N. Y. is wholesale Agent. *

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